

US ROCKIES WATTENBERG PLANNING

LARIMER-NAD83-UTMFT13N

5N-68W-25 JODSTER SOUTH 24-25HZ PAD

JODSTER SOUTH 25-11HZ

Plan A

Plan: Permit Rev-2

SHL Lat/Long: 40.371600/-104.947737

Survey Program: MWD+IFR+MSA

Standard Planning Report

30 December, 2018

Project: LARIMER-NAD83-UTMFT13N
Site: 5N-68W-25 JODSTER SOUTH 24-25HZ PAD
Well: JODSTER SOUTH 25-11HZ
Wellbore: Plan A
Design: Permit Rev-2

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1526.19	9-5/8
7042.00	8007.03	5-1/2

WELL DETAILS: JODSTER SOUTH 25-11HZ

GL = 4861.00

RKB = 17' @ 4878.00usft (Drilling Rig)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	205.00	0.00	0.00	205.00	0.00	0.00	0.00	0.00	0.00	
3	1848.33	24.65	181.60	1798.11	-347.95	-9.72	1.50	181.60	-8.32	
4	5925.34	24.65	181.60	5503.59	-2047.70	-57.20	0.00	0.00	-48.98	
5	6251.92	23.28	170.00	5802.17	-2179.41	-47.89	1.50	-111.46	-39.14	
6	6933.82	23.28	170.00	6428.55	-2444.82	-1.09	0.00	0.00	8.73	
7	8007.03	89.87	90.23	7042.00	-2706.79	710.82	8.00	-80.64	721.68	
8	18315.38	89.87	90.23	7065.00	-2748.22	11019.06	0.00	0.00	11030.01	JODSTER SOUTH 25-11HZ_BHL

SHL
2347' FNL
704' FEL

HEEL
224' FSL
42' FWL

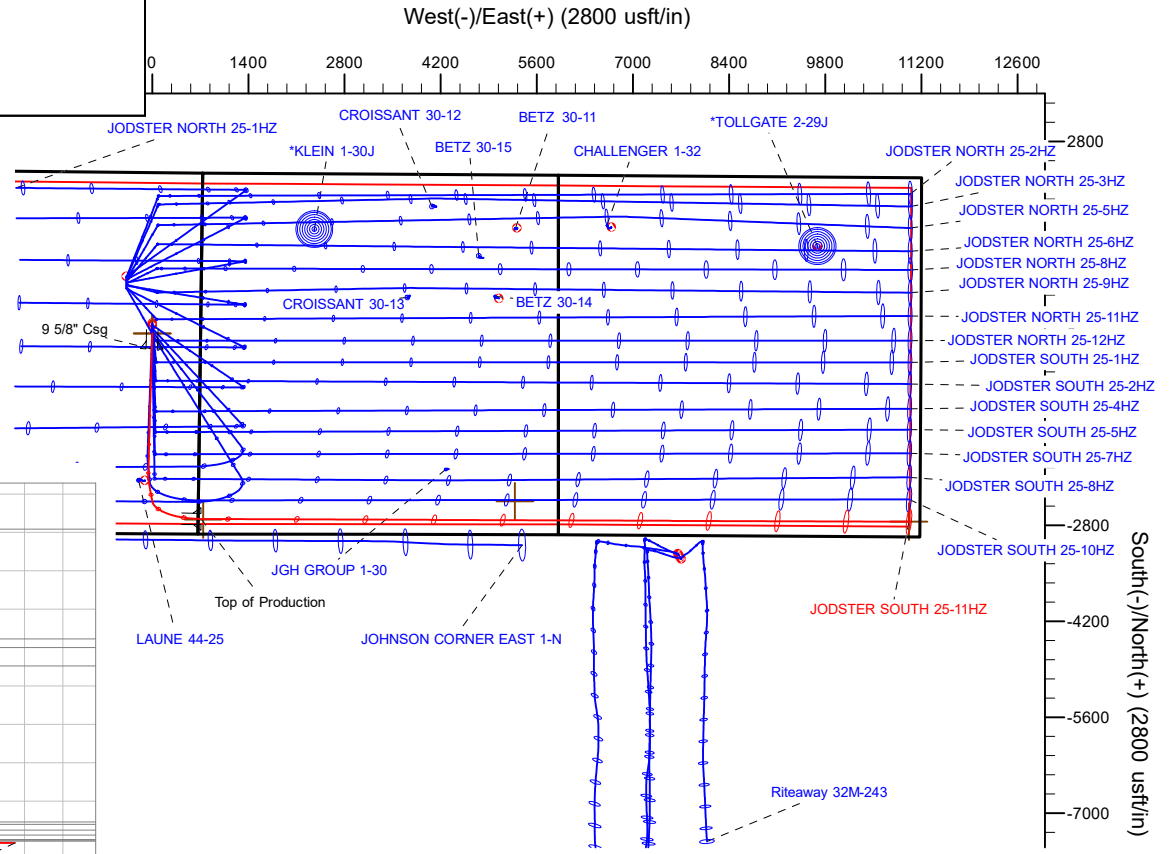
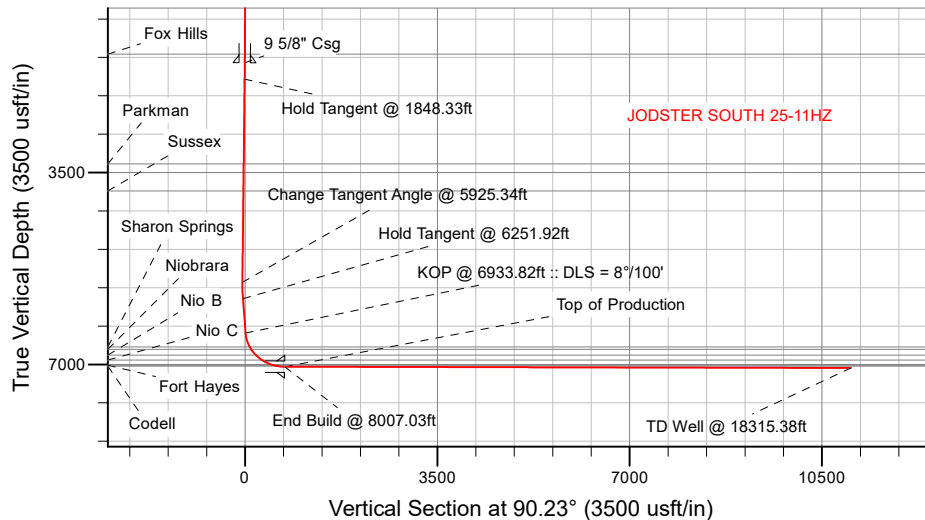
TOE
222' FSL
161' FEL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
JODSTER SOUTH 25-11HZ_SHL	0.00	0.00	0.00	40.371600	-104.947737
JODSTER SOUTH 25-11HZ_BHL	7065.00	-2748.22	11019.06	40.364047	-104.908180

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1340.00	1357.40	Fox Hills
3342.00	3547.03	Parkman
3837.00	4091.66	Sussex
6683.00	7222.60	Sharon Springs
6726.00	7276.13	Niobrara
6828.00	7414.94	Nio B
6919.00	7564.25	Nio C
7014.00	7799.32	Fort Hayes
7034.00	7897.09	Codell



Plan: Permit Rev-2 (JODSTER SOUTH 25-11HZ/Plan A)

Date: 12/30/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JODSTER SOUTH 25-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4878.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4878.00usft (Drilling Rig)
Site:	5N-68W-25 JODSTER SOUTH 24-25HZ PAD	North Reference:	True
Well:	JODSTER SOUTH 25-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Project	LARIMER-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		5N-68W-25 JODSTER SOUTH 24-25HZ PAD			
Site Position:		Northing:	14,662,206.38 usft	Latitude:	40.372011
From:	Lat/Long	Easting:	1,654,974.62 usft	Longitude:	-104.947732
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.03 °

Well	JODSTER SOUTH 25-11HZ					
Well Position	+N/-S	-149.67 usft	Northing:	14,662,056.70 usft	Latitude:	40.371600
	+E/-W	-1.39 usft	Easting:	1,654,973.32 usft	Longitude:	-104.947737
Position Uncertainty	3.28 usft		Wellhead Elevation:		Ground Level:	4,861.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/5/2018	8.18	66.77	52,218.95280411

Design	Permit Rev-2				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	90.23	

Plan Survey Tool Program	Date	12/30/2018			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,500.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	
2	1,500.00	18,315.38	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

Corporate
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Well:	JODSTER SOUTH 25-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
205.00	0.00	0.00	205.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,848.33	24.65	181.60	1,798.11	-347.95	-9.72	1.50	1.50	0.00	181.60	
5,925.34	24.65	181.60	5,503.59	-2,047.70	-57.20	0.00	0.00	0.00	0.00	
6,251.92	23.28	170.00	5,802.17	-2,179.41	-47.89	1.50	-0.42	-3.55	-111.46	
6,933.82	23.28	170.00	6,428.56	-2,444.82	-1.09	0.00	0.00	0.00	0.00	
8,007.03	89.87	90.23	7,042.00	-2,706.79	710.82	8.00	6.20	-7.43	-80.64	
18,315.38	89.87	90.23	7,065.00	-2,748.22	11,019.06	0.00	0.00	0.00	0.00	JODSTER SOUTH 25

Planning Report

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Well:	JODSTER SOUTH 25-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
205.00	0.00	0.00	205.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 205.00ft									
300.00	1.43	181.60	299.99	-1.18	-0.03	-0.03	1.50	1.50	0.00
400.00	2.93	181.60	399.92	-4.97	-0.14	-0.12	1.50	1.50	0.00
500.00	4.43	181.60	499.71	-11.38	-0.32	-0.27	1.50	1.50	0.00
600.00	5.93	181.60	599.30	-20.40	-0.57	-0.49	1.50	1.50	0.00
700.00	7.43	181.60	698.62	-32.02	-0.89	-0.77	1.50	1.50	0.00
800.00	8.93	181.60	797.60	-46.23	-1.29	-1.11	1.50	1.50	0.00
900.00	10.43	181.60	896.17	-63.03	-1.76	-1.51	1.50	1.50	0.00
1,000.00	11.93	181.60	994.27	-82.40	-2.30	-1.97	1.50	1.50	0.00
1,100.00	13.43	181.60	1,091.83	-104.33	-2.91	-2.50	1.50	1.50	0.00
1,200.00	14.93	181.60	1,188.79	-128.81	-3.60	-3.08	1.50	1.50	0.00
1,300.00	16.43	181.60	1,285.06	-155.82	-4.35	-3.73	1.50	1.50	0.00
1,357.40	17.29	181.60	1,340.00	-172.46	-4.82	-4.12	1.50	1.50	0.00
Fox Hills									
1,400.00	17.93	181.60	1,380.60	-185.34	-5.18	-4.43	1.50	1.50	0.00
1,500.00	19.43	181.60	1,475.33	-217.34	-6.07	-5.20	1.50	1.50	0.00
1,526.19	19.82	181.60	1,500.00	-226.13	-6.32	-5.41	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	20.93	181.60	1,569.20	-251.82	-7.03	-6.02	1.50	1.50	0.00
1,700.00	22.43	181.60	1,662.12	-288.74	-8.07	-6.91	1.50	1.50	0.00
1,800.00	23.93	181.60	1,754.05	-328.07	-9.16	-7.85	1.50	1.50	0.00
1,848.33	24.65	181.60	1,798.11	-347.95	-9.72	-8.32	1.50	1.50	0.00
Hold Tangent @ 1848.33ft									
1,900.00	24.65	181.60	1,845.06	-369.49	-10.32	-8.84	0.00	0.00	0.00
2,000.00	24.65	181.60	1,935.95	-411.18	-11.49	-9.83	0.00	0.00	0.00
2,100.00	24.65	181.60	2,026.84	-452.87	-12.65	-10.83	0.00	0.00	0.00
2,200.00	24.65	181.60	2,117.73	-494.56	-13.81	-11.83	0.00	0.00	0.00
2,300.00	24.65	181.60	2,208.61	-536.25	-14.98	-12.83	0.00	0.00	0.00
2,400.00	24.65	181.60	2,299.50	-577.94	-16.14	-13.82	0.00	0.00	0.00
2,500.00	24.65	181.60	2,390.39	-619.63	-17.31	-14.82	0.00	0.00	0.00
2,600.00	24.65	181.60	2,481.27	-661.32	-18.47	-15.82	0.00	0.00	0.00
2,700.00	24.65	181.60	2,572.16	-703.02	-19.64	-16.81	0.00	0.00	0.00
2,800.00	24.65	181.60	2,663.05	-744.71	-20.80	-17.81	0.00	0.00	0.00
2,900.00	24.65	181.60	2,753.94	-786.40	-21.97	-18.81	0.00	0.00	0.00
3,000.00	24.65	181.60	2,844.82	-828.09	-23.13	-19.81	0.00	0.00	0.00
3,100.00	24.65	181.60	2,935.71	-869.78	-24.30	-20.80	0.00	0.00	0.00
3,200.00	24.65	181.60	3,026.60	-911.47	-25.46	-21.80	0.00	0.00	0.00
3,300.00	24.65	181.60	3,117.49	-953.16	-26.62	-22.80	0.00	0.00	0.00
3,400.00	24.65	181.60	3,208.37	-994.85	-27.79	-23.79	0.00	0.00	0.00
3,500.00	24.65	181.60	3,299.26	-1,036.54	-28.95	-24.79	0.00	0.00	0.00
3,547.03	24.65	181.60	3,342.00	-1,056.15	-29.50	-25.26	0.00	0.00	0.00
Parkman									
3,600.00	24.65	181.60	3,390.15	-1,078.24	-30.12	-25.79	0.00	0.00	0.00
3,700.00	24.65	181.60	3,481.03	-1,119.93	-31.28	-26.79	0.00	0.00	0.00
3,800.00	24.65	181.60	3,571.92	-1,161.62	-32.45	-27.78	0.00	0.00	0.00
3,900.00	24.65	181.60	3,662.81	-1,203.31	-33.61	-28.78	0.00	0.00	0.00
4,000.00	24.65	181.60	3,753.70	-1,245.00	-34.78	-29.78	0.00	0.00	0.00
4,091.66	24.65	181.60	3,837.00	-1,283.21	-35.84	-30.69	0.00	0.00	0.00
Sussex									

Planning Report

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Site:	5N-68W-25 JODSTER SOUTH 24-25HZ PAD	North Reference:	True
Well:	JODSTER SOUTH 25-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,100.00	24.65	181.60	3,844.58	-1,286.69	-35.94	-30.78	0.00	0.00	0.00	
4,200.00	24.65	181.60	3,935.47	-1,328.38	-37.11	-31.77	0.00	0.00	0.00	
4,300.00	24.65	181.60	4,026.36	-1,370.07	-38.27	-32.77	0.00	0.00	0.00	
4,400.00	24.65	181.60	4,117.25	-1,411.76	-39.43	-33.77	0.00	0.00	0.00	
4,500.00	24.65	181.60	4,208.13	-1,453.46	-40.60	-34.76	0.00	0.00	0.00	
4,600.00	24.65	181.60	4,299.02	-1,495.15	-41.76	-35.76	0.00	0.00	0.00	
4,700.00	24.65	181.60	4,389.91	-1,536.84	-42.93	-36.76	0.00	0.00	0.00	
4,800.00	24.65	181.60	4,480.79	-1,578.53	-44.09	-37.76	0.00	0.00	0.00	
4,900.00	24.65	181.60	4,571.68	-1,620.22	-45.26	-38.75	0.00	0.00	0.00	
5,000.00	24.65	181.60	4,662.57	-1,661.91	-46.42	-39.75	0.00	0.00	0.00	
5,100.00	24.65	181.60	4,753.46	-1,703.60	-47.59	-40.75	0.00	0.00	0.00	
5,200.00	24.65	181.60	4,844.34	-1,745.29	-48.75	-41.74	0.00	0.00	0.00	
5,300.00	24.65	181.60	4,935.23	-1,786.99	-49.92	-42.74	0.00	0.00	0.00	
5,400.00	24.65	181.60	5,026.12	-1,828.68	-51.08	-43.74	0.00	0.00	0.00	
5,500.00	24.65	181.60	5,117.01	-1,870.37	-52.24	-44.74	0.00	0.00	0.00	
5,600.00	24.65	181.60	5,207.89	-1,912.06	-53.41	-45.73	0.00	0.00	0.00	
5,700.00	24.65	181.60	5,298.78	-1,953.75	-54.57	-46.73	0.00	0.00	0.00	
5,800.00	24.65	181.60	5,389.67	-1,995.44	-55.74	-47.73	0.00	0.00	0.00	
5,900.00	24.65	181.60	5,480.55	-2,037.13	-56.90	-48.72	0.00	0.00	0.00	
5,925.34	24.65	181.60	5,503.59	-2,047.70	-57.20	-48.98	0.00	0.00	0.00	
Change Tangent Angle @ 5925.34ft										
6,000.00	24.26	179.06	5,571.55	-2,078.60	-57.38	-49.04	1.50	-0.52	-3.40	
6,100.00	23.81	175.55	5,662.88	-2,119.27	-55.48	-46.97	1.50	-0.45	-3.51	
6,200.00	23.44	171.92	5,754.51	-2,159.08	-51.12	-42.45	1.50	-0.37	-3.63	
6,251.92	23.28	170.00	5,802.17	-2,179.41	-47.89	-39.14	1.50	-0.31	-3.70	
Hold Tangent @ 6251.92ft										
6,300.00	23.28	170.00	5,846.34	-2,198.12	-44.59	-35.76	0.00	0.00	0.00	
6,400.00	23.28	170.00	5,938.20	-2,237.05	-37.72	-28.74	0.00	0.00	0.00	
6,500.00	23.28	170.00	6,030.05	-2,275.97	-30.86	-21.72	0.00	0.00	0.00	
6,600.00	23.28	170.00	6,121.91	-2,314.89	-24.00	-14.71	0.00	0.00	0.00	
6,700.00	23.28	170.00	6,213.77	-2,353.81	-17.13	-7.69	0.00	0.00	0.00	
6,800.00	23.28	170.00	6,305.63	-2,392.73	-10.27	-0.67	0.00	0.00	0.00	
6,900.00	23.28	170.00	6,397.49	-2,431.66	-3.41	6.35	0.00	0.00	0.00	
6,933.82	23.28	170.00	6,428.56	-2,444.82	-1.09	8.73	0.00	0.00	0.00	
KOP @ 6933.82ft :: DLS = 8°/100'										
7,000.00	24.67	157.40	6,489.06	-2,470.47	6.50	16.41	8.00	2.10	-19.04	
7,100.00	28.46	141.56	6,578.61	-2,508.46	29.36	39.43	8.00	3.79	-15.84	
7,200.00	33.64	129.70	6,664.33	-2,544.87	65.54	75.76	8.00	5.19	-11.86	
7,222.60	34.95	127.48	6,683.00	-2,552.81	75.50	85.74	8.00	5.77	-9.83	
Sharon Springs										
7,276.13	38.18	122.76	6,726.00	-2,571.10	101.59	111.91	8.00	6.04	-8.81	
Niobrara										
7,300.00	39.68	120.87	6,744.57	-2,579.00	114.34	124.69	8.00	6.27	-7.90	
7,400.00	46.23	114.11	6,817.76	-2,610.18	174.79	185.26	8.00	6.55	-6.76	
7,414.94	47.24	113.23	6,828.00	-2,614.55	184.75	195.24	8.00	6.76	-5.88	
Nio B										
7,500.00	53.09	108.72	6,882.48	-2,637.81	245.72	256.31	8.00	6.89	-5.31	
7,564.25	57.62	105.75	6,919.00	-2,653.43	296.20	306.85	8.00	7.04	-4.62	
Nio C										
7,600.00	60.17	104.23	6,937.47	-2,661.34	325.76	336.44	8.00	7.12	-4.26	
7,700.00	67.37	100.35	6,981.66	-2,680.33	413.35	424.10	8.00	7.20	-3.89	
7,799.32	74.60	96.87	7,014.00	-2,694.31	506.12	516.93	8.00	7.29	-3.50	
Fort Hayes										

Corporate Planning Report

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Site:	5N-68W-25 JODSTER SOUTH 24-25HZ PAD	North Reference:	True
Well:	JODSTER SOUTH 25-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,800.00	74.65	96.85	7,014.18	-2,694.39	506.77	517.58	8.00	7.32	-3.36
7,897.09	81.78	93.68	7,034.00	-2,703.07	601.34	612.19	8.00	7.34	-3.26
Codell									
7,900.00	81.99	93.59	7,034.41	-2,703.25	604.22	615.06	8.00	7.35	-3.18
8,000.00	89.35	90.45	7,041.95	-2,706.75	703.79	714.65	8.00	7.36	-3.14
8,007.03	89.87	90.23	7,042.00	-2,706.79	710.82	721.68	8.00	7.37	-3.12
End Build @ 8007.03ft - Top of Production									
8,100.00	89.87	90.23	7,042.21	-2,707.17	803.79	814.65	0.00	0.00	0.00
8,200.00	89.87	90.23	7,042.43	-2,707.57	903.79	914.65	0.00	0.00	0.00
8,300.00	89.87	90.23	7,042.65	-2,707.97	1,003.79	1,014.65	0.00	0.00	0.00
8,400.00	89.87	90.23	7,042.88	-2,708.37	1,103.79	1,114.65	0.00	0.00	0.00
8,500.00	89.87	90.23	7,043.10	-2,708.78	1,203.78	1,214.65	0.00	0.00	0.00
8,600.00	89.87	90.23	7,043.32	-2,709.18	1,303.78	1,314.65	0.00	0.00	0.00
8,700.00	89.87	90.23	7,043.55	-2,709.58	1,403.78	1,414.65	0.00	0.00	0.00
8,800.00	89.87	90.23	7,043.77	-2,709.98	1,503.78	1,514.65	0.00	0.00	0.00
8,900.00	89.87	90.23	7,043.99	-2,710.38	1,603.78	1,614.65	0.00	0.00	0.00
9,000.00	89.87	90.23	7,044.22	-2,710.79	1,703.78	1,714.65	0.00	0.00	0.00
9,100.00	89.87	90.23	7,044.44	-2,711.19	1,803.78	1,814.65	0.00	0.00	0.00
9,200.00	89.87	90.23	7,044.66	-2,711.59	1,903.78	1,914.65	0.00	0.00	0.00
9,300.00	89.87	90.23	7,044.89	-2,711.99	2,003.78	2,014.65	0.00	0.00	0.00
9,400.00	89.87	90.23	7,045.11	-2,712.39	2,103.77	2,114.65	0.00	0.00	0.00
9,500.00	89.87	90.23	7,045.33	-2,712.79	2,203.77	2,214.65	0.00	0.00	0.00
9,600.00	89.87	90.23	7,045.55	-2,713.20	2,303.77	2,314.65	0.00	0.00	0.00
9,700.00	89.87	90.23	7,045.78	-2,713.60	2,403.77	2,414.65	0.00	0.00	0.00
9,800.00	89.87	90.23	7,046.00	-2,714.00	2,503.77	2,514.65	0.00	0.00	0.00
9,900.00	89.87	90.23	7,046.22	-2,714.40	2,603.77	2,614.64	0.00	0.00	0.00
10,000.00	89.87	90.23	7,046.45	-2,714.80	2,703.77	2,714.64	0.00	0.00	0.00
10,100.00	89.87	90.23	7,046.67	-2,715.21	2,803.77	2,814.64	0.00	0.00	0.00
10,200.00	89.87	90.23	7,046.89	-2,715.61	2,903.77	2,914.64	0.00	0.00	0.00
10,300.00	89.87	90.23	7,047.12	-2,716.01	3,003.77	3,014.64	0.00	0.00	0.00
10,400.00	89.87	90.23	7,047.34	-2,716.41	3,103.76	3,114.64	0.00	0.00	0.00
10,500.00	89.87	90.23	7,047.56	-2,716.81	3,203.76	3,214.64	0.00	0.00	0.00
10,600.00	89.87	90.23	7,047.79	-2,717.21	3,303.76	3,314.64	0.00	0.00	0.00
10,700.00	89.87	90.23	7,048.01	-2,717.62	3,403.76	3,414.64	0.00	0.00	0.00
10,800.00	89.87	90.23	7,048.23	-2,718.02	3,503.76	3,514.64	0.00	0.00	0.00
10,900.00	89.87	90.23	7,048.46	-2,718.42	3,603.76	3,614.64	0.00	0.00	0.00
11,000.00	89.87	90.23	7,048.68	-2,718.82	3,703.76	3,714.64	0.00	0.00	0.00
11,100.00	89.87	90.23	7,048.90	-2,719.22	3,803.76	3,814.64	0.00	0.00	0.00
11,200.00	89.87	90.23	7,049.12	-2,719.63	3,903.76	3,914.64	0.00	0.00	0.00
11,300.00	89.87	90.23	7,049.35	-2,720.03	4,003.75	4,014.64	0.00	0.00	0.00
11,400.00	89.87	90.23	7,049.57	-2,720.43	4,103.75	4,114.64	0.00	0.00	0.00
11,500.00	89.87	90.23	7,049.79	-2,720.83	4,203.75	4,214.64	0.00	0.00	0.00
11,600.00	89.87	90.23	7,050.02	-2,721.23	4,303.75	4,314.64	0.00	0.00	0.00
11,700.00	89.87	90.23	7,050.24	-2,721.64	4,403.75	4,414.64	0.00	0.00	0.00
11,800.00	89.87	90.23	7,050.46	-2,722.04	4,503.75	4,514.64	0.00	0.00	0.00
11,900.00	89.87	90.23	7,050.69	-2,722.44	4,603.75	4,614.64	0.00	0.00	0.00
12,000.00	89.87	90.23	7,050.91	-2,722.84	4,703.75	4,714.64	0.00	0.00	0.00
12,100.00	89.87	90.23	7,051.13	-2,723.24	4,803.75	4,814.64	0.00	0.00	0.00
12,200.00	89.87	90.23	7,051.36	-2,723.64	4,903.75	4,914.64	0.00	0.00	0.00
12,300.00	89.87	90.23	7,051.58	-2,724.05	5,003.74	5,014.64	0.00	0.00	0.00
12,400.00	89.87	90.23	7,051.80	-2,724.45	5,103.74	5,114.64	0.00	0.00	0.00
12,500.00	89.87	90.23	7,052.02	-2,724.85	5,203.74	5,214.64	0.00	0.00	0.00
12,600.00	89.87	90.23	7,052.25	-2,725.25	5,303.74	5,314.64	0.00	0.00	0.00
12,700.00	89.87	90.23	7,052.47	-2,725.65	5,403.74	5,414.64	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JODSTER SOUTH 25-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4878.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4878.00usft (Drilling Rig)
Site:	5N-68W-25 JODSTER SOUTH 24-25HZ PAD	North Reference:	True
Well:	JODSTER SOUTH 25-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,800.00	89.87	90.23	7,052.69	-2,726.06	5,503.74	5,514.64	0.00	0.00	0.00
12,900.00	89.87	90.23	7,052.92	-2,726.46	5,603.74	5,614.64	0.00	0.00	0.00
13,000.00	89.87	90.23	7,053.14	-2,726.86	5,703.74	5,714.64	0.00	0.00	0.00
13,100.00	89.87	90.23	7,053.36	-2,727.26	5,803.74	5,814.64	0.00	0.00	0.00
13,200.00	89.87	90.23	7,053.59	-2,727.66	5,903.73	5,914.64	0.00	0.00	0.00
13,300.00	89.87	90.23	7,053.81	-2,728.07	6,003.73	6,014.64	0.00	0.00	0.00
13,400.00	89.87	90.23	7,054.03	-2,728.47	6,103.73	6,114.64	0.00	0.00	0.00
13,500.00	89.87	90.23	7,054.26	-2,728.87	6,203.73	6,214.64	0.00	0.00	0.00
13,600.00	89.87	90.23	7,054.48	-2,729.27	6,303.73	6,314.64	0.00	0.00	0.00
13,700.00	89.87	90.23	7,054.70	-2,729.67	6,403.73	6,414.64	0.00	0.00	0.00
13,800.00	89.87	90.23	7,054.93	-2,730.07	6,503.73	6,514.64	0.00	0.00	0.00
13,900.00	89.87	90.23	7,055.15	-2,730.48	6,603.73	6,614.63	0.00	0.00	0.00
14,000.00	89.87	90.23	7,055.37	-2,730.88	6,703.73	6,714.63	0.00	0.00	0.00
14,100.00	89.87	90.23	7,055.59	-2,731.28	6,803.73	6,814.63	0.00	0.00	0.00
14,200.00	89.87	90.23	7,055.82	-2,731.68	6,903.72	6,914.63	0.00	0.00	0.00
14,300.00	89.87	90.23	7,056.04	-2,732.08	7,003.72	7,014.63	0.00	0.00	0.00
14,400.00	89.87	90.23	7,056.26	-2,732.49	7,103.72	7,114.63	0.00	0.00	0.00
14,500.00	89.87	90.23	7,056.49	-2,732.89	7,203.72	7,214.63	0.00	0.00	0.00
14,600.00	89.87	90.23	7,056.71	-2,733.29	7,303.72	7,314.63	0.00	0.00	0.00
14,700.00	89.87	90.23	7,056.93	-2,733.69	7,403.72	7,414.63	0.00	0.00	0.00
14,800.00	89.87	90.23	7,057.16	-2,734.09	7,503.72	7,514.63	0.00	0.00	0.00
14,900.00	89.87	90.23	7,057.38	-2,734.49	7,603.72	7,614.63	0.00	0.00	0.00
15,000.00	89.87	90.23	7,057.60	-2,734.90	7,703.72	7,714.63	0.00	0.00	0.00
15,100.00	89.87	90.23	7,057.83	-2,735.30	7,803.71	7,814.63	0.00	0.00	0.00
15,200.00	89.87	90.23	7,058.05	-2,735.70	7,903.71	7,914.63	0.00	0.00	0.00
15,300.00	89.87	90.23	7,058.27	-2,736.10	8,003.71	8,014.63	0.00	0.00	0.00
15,400.00	89.87	90.23	7,058.50	-2,736.50	8,103.71	8,114.63	0.00	0.00	0.00
15,500.00	89.87	90.23	7,058.72	-2,736.91	8,203.71	8,214.63	0.00	0.00	0.00
15,600.00	89.87	90.23	7,058.94	-2,737.31	8,303.71	8,314.63	0.00	0.00	0.00
15,700.00	89.87	90.23	7,059.16	-2,737.71	8,403.71	8,414.63	0.00	0.00	0.00
15,800.00	89.87	90.23	7,059.39	-2,738.11	8,503.71	8,514.63	0.00	0.00	0.00
15,900.00	89.87	90.23	7,059.61	-2,738.51	8,603.71	8,614.63	0.00	0.00	0.00
16,000.00	89.87	90.23	7,059.83	-2,738.92	8,703.71	8,714.63	0.00	0.00	0.00
16,100.00	89.87	90.23	7,060.06	-2,739.32	8,803.70	8,814.63	0.00	0.00	0.00
16,200.00	89.87	90.23	7,060.28	-2,739.72	8,903.70	8,914.63	0.00	0.00	0.00
16,300.00	89.87	90.23	7,060.50	-2,740.12	9,003.70	9,014.63	0.00	0.00	0.00
16,400.00	89.87	90.23	7,060.73	-2,740.52	9,103.70	9,114.63	0.00	0.00	0.00
16,500.00	89.87	90.23	7,060.95	-2,740.92	9,203.70	9,214.63	0.00	0.00	0.00
16,600.00	89.87	90.23	7,061.17	-2,741.33	9,303.70	9,314.63	0.00	0.00	0.00
16,700.00	89.87	90.23	7,061.40	-2,741.73	9,403.70	9,414.63	0.00	0.00	0.00
16,800.00	89.87	90.23	7,061.62	-2,742.13	9,503.70	9,514.63	0.00	0.00	0.00
16,900.00	89.87	90.23	7,061.84	-2,742.53	9,603.70	9,614.63	0.00	0.00	0.00
17,000.00	89.87	90.23	7,062.07	-2,742.93	9,703.69	9,714.63	0.00	0.00	0.00
17,100.00	89.87	90.23	7,062.29	-2,743.34	9,803.69	9,814.63	0.00	0.00	0.00
17,200.00	89.87	90.23	7,062.51	-2,743.74	9,903.69	9,914.63	0.00	0.00	0.00
17,300.00	89.87	90.23	7,062.73	-2,744.14	10,003.69	10,014.63	0.00	0.00	0.00
17,400.00	89.87	90.23	7,062.96	-2,744.54	10,103.69	10,114.63	0.00	0.00	0.00
17,500.00	89.87	90.23	7,063.18	-2,744.94	10,203.69	10,214.63	0.00	0.00	0.00
17,600.00	89.87	90.23	7,063.40	-2,745.35	10,303.69	10,314.63	0.00	0.00	0.00
17,700.00	89.87	90.23	7,063.63	-2,745.75	10,403.69	10,414.63	0.00	0.00	0.00
17,800.00	89.87	90.23	7,063.85	-2,746.15	10,503.69	10,514.63	0.00	0.00	0.00
17,900.00	89.87	90.23	7,064.07	-2,746.55	10,603.69	10,614.63	0.00	0.00	0.00
18,000.00	89.87	90.23	7,064.30	-2,746.95	10,703.68	10,714.62	0.00	0.00	0.00
18,100.00	89.87	90.23	7,064.52	-2,747.35	10,803.68	10,814.62	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well JODSTER SOUTH 25-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4878.00usft (Drilling Rig)
Project:	LARIMER-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4878.00usft (Drilling Rig)
Site:	5N-68W-25 JODSTER SOUTH 24-25HZ PAD	North Reference:	True
Well:	JODSTER SOUTH 25-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,200.00	89.87	90.23	7,064.74	-2,747.76	10,903.68	10,914.62	0.00	0.00	0.00
18,300.00	89.87	90.23	7,064.97	-2,748.16	11,003.68	11,014.62	0.00	0.00	0.00
18,315.38	89.87	90.23	7,065.00	-2,748.22	11,019.06	11,030.01	0.00	0.00	0.00
TD Well @ 18315.38ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,526.19	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
8,007.03	7,042.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,357.40	1,340.00	Fox Hills				
3,547.03	3,342.00	Parkman				
4,091.66	3,837.00	Sussex				
7,222.60	6,683.00	Sharon Springs				
7,276.13	6,726.00	Niobrara				
7,414.94	6,828.00	Nio B				
7,564.25	6,919.00	Nio C				
7,799.32	7,014.00	Fort Hayes				
7,897.09	7,034.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
205.00	205.00	0.00	0.00	Begin Nudge @ 205.00ft	
1,848.33	1,798.11	-347.95	-9.72	Hold Tangent @ 1848.33ft	
5,925.34	5,503.59	-2,047.70	-57.20	Change Tangent Angle @ 5925.34ft	
6,251.92	5,802.17	-2,179.41	-47.89	Hold Tangent @ 6251.92ft	
6,933.82	6,428.56	-2,444.82	-1.09	KOP @ 6933.82ft :: DLS = 8°/100'	
8,007.03	7,042.00	-2,706.79	710.82	End Build @ 8007.03ft	
18,315.38	7,065.00	-2,748.22	11,019.06	TD Well @ 18315.38ft	